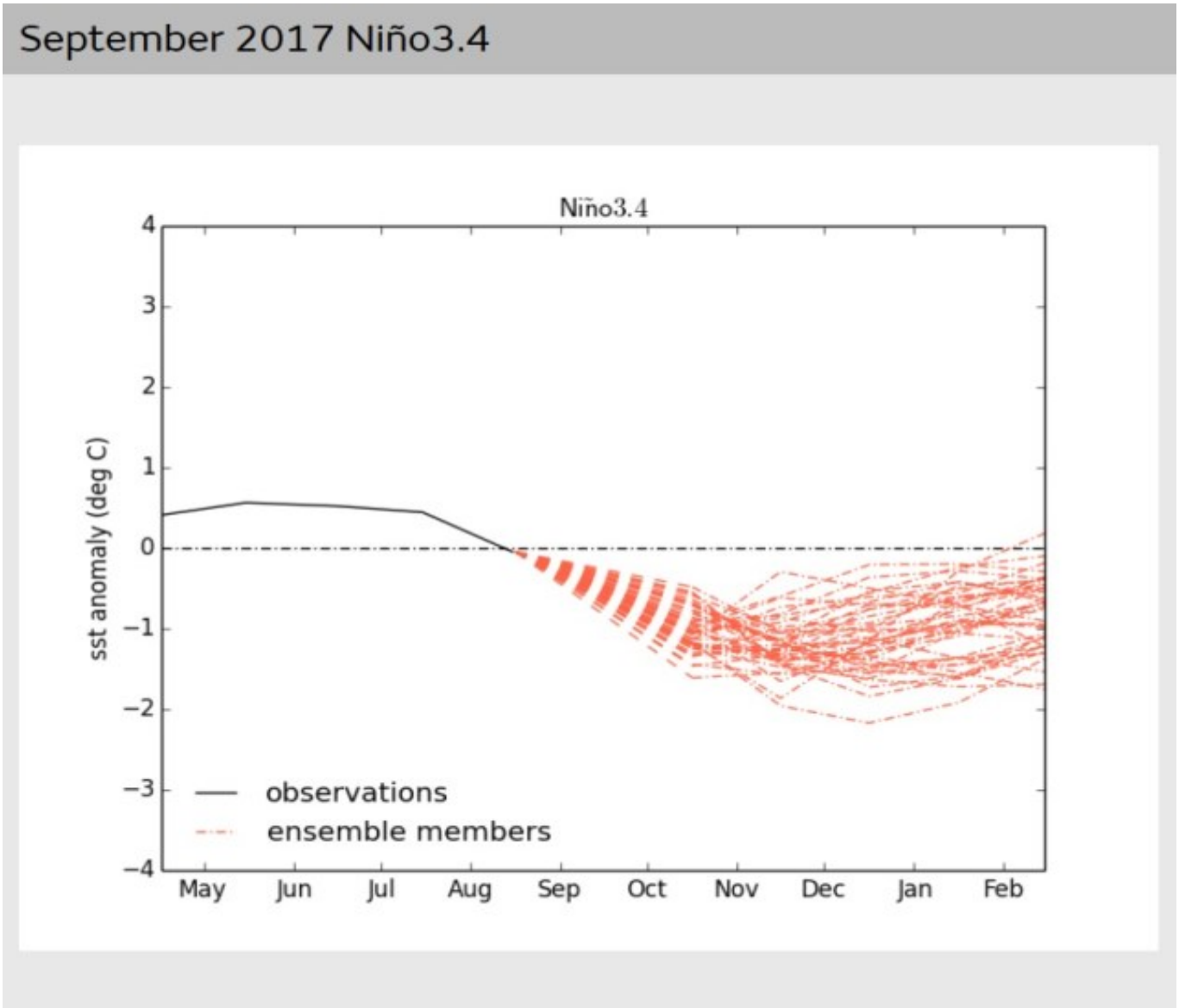
Is La Niña on the way?

Description

During 2015 and 2016, the planet experienced one of the largest El Niño events in a century. El Niño (Spanish for the boy) is actually the warm phase of the El Niño-Southern Oscillation and climate scientists are now suggesting that this oscillation in tropical Pacific temperature is likely tipping towards its opposite cool phase, La Niña.



Ensemble members show an increasing likelihood of La Niña conditions developing during October and November. La Niña conditions are said to develop when the sea surface temperature anomaly goes below –0.5°C.

Perhaps less well known than its larger brother, La Niña (Spanish for ‘the girl’) is an event that can

trigger significant impacts. Professor Adam Scaife, head of monthly to decadal prediction at the Met Office, said: “During El Niño, temperatures in the equatorial Pacific can warm by as much as 3°C. La Niña tends to be smaller and rarely exceeds 2°C, but its effects reach across the globe and can have just as much impact.”

Historically, La Niña events tend to occur about once every five years, but forecasts over the last few months show an increasing risk of La Niña developing this winter. A really big La Niña like that in 2010/11 is very unlikely, but the chance of a moderate strength event is now several times the historical chance.

La Niña is associated with a shift in rainfall towards the western Pacific. Regions from Indonesia, the Philippines, Papua New Guinea, the Solomon Islands and north-east Australia will all be at risk of heavier than average rainfall if La Niña develops. At the other side of the tropical Pacific, Peru would be at risk of drought, but local fisheries would receive a boost as fish stocks can access additional nutrients rising in upwelling currents driven by La Niña.

The effects of La Niña aren’t confined to the tropical Pacific. If La Niña develops, then North-western coastal communities of North America would be at increased risk of a cold winter as La Niña increases northerly winds there. Meanwhile southern Africa would be more likely to experience a cooler and wetter summer than normal, and Brazil would have an increased risk of heavy rainfall in coming months.

Adam Scaife concluded: “As well as its regional effects, La Niña can cause a temporary cooling of global temperatures but the strength of the current event suggests that this will be no more than a tenth of the global warmth we have accrued so far due to climate change.”

Date Created
October 2017

Met Office Space Weather Operations Centre – third anniversary

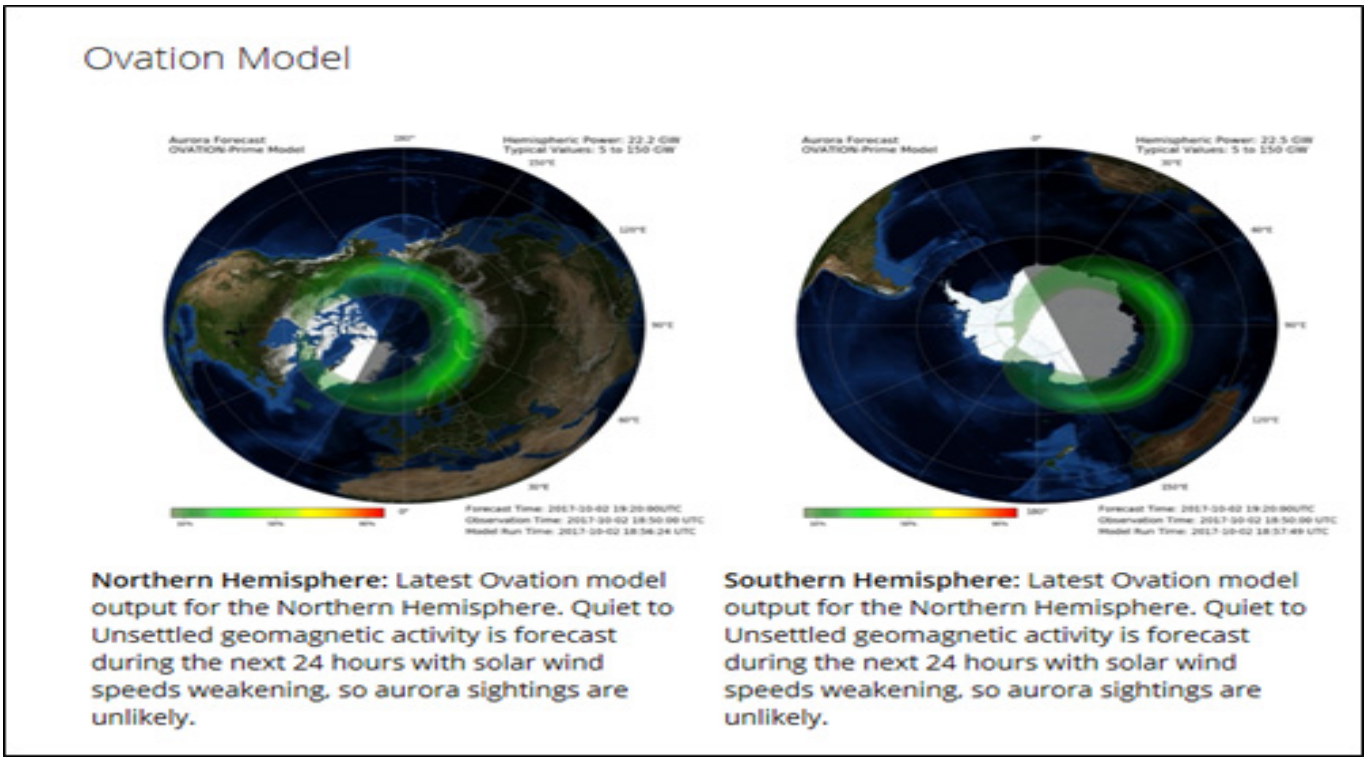
Description

Mark Gibbs – Head of space weather

It was nearly seven years ago, when my boss said “Mark we’ve got a little project for you called space weather “. Little did I know at that time what an adventure it would take us on.

We began forecaster training, utilising short-term project funding, in late 2011 following space weather’s inclusion by the Government on the National Risk Register (NRR). While the prospect of securing long-term funding from government looked remote and a viable future for Met Office space weather operations uncertain, we started producing our first routine forecasts in time for the 2012 Olympics. Then in late 2013, funding was secured and the Met Office Space Weather Operations Centre (MOSWOC) was created. It began 24/7 operations in April 2014 and was officially opened on 8 October by the then Science Minister Greg Clarke.

Today, three years on, MOSWOC remains one of only three centres manned 24/7 by expert space weather forecasters. The other two are both in the US (NOAA Space weather Prediction Centre and US Air Force 557th Weather Wing). Space weather, in the Met Office, has moved from being a project to an on-going programme in its own right. The Department for Business, Energy and Industrial Strategy (BEIS) funds MOSWOC as a national capability and space weather remains as a ‘high’ risk on the NRR with Met Office being technical advisors to the UK Government on the topic. We continue to develop our capability and have just implemented an aurora prediction model (called OVATION) providing 30 minute ahead forecasts of the position and intensity of the aurora. It is available to the public via our website.


Ovation Model
Northern Hemisphere: Latest Ovation model output for the Northern Hemisphere. Quiet to Unsettled geomagnetic activity is forecast during the next 24 hours with solar wind speeds weakening, so aurora sightings are unlikely.
Southern Hemisphere: Latest Ovation model output for the Northern Hemisphere. Quiet to Unsettled geomagnetic activity is forecast during the next 24 hours with solar wind speeds weakening, so aurora sightings are unlikely.

We hope the aurora model will significantly increase public interest and engagement in space weather over the coming months. Public engagement has been a focus over the summer with the aim of increasing understanding of space weather and its potential impacts. In addition to introducing automated alerts and warnings of space weather activity on our twitter feed to keep the public informed, we have increased our activity on this channel and have trebled our followers and secured official Twitter verification for @MetOfficeSpace.

To celebrate our anniversary, we are streaming a Met Office Live Space weather special on 10

October at 1pm. We will show viewers around MOSWOC and discuss space weather, the OVATION model and the recent activity with our team and Professor Lucie Green, space scientist at UCL's Mullard Science Laboratory.

Through the first two weeks of September, MOSWOC handled the largest space weather event for over a decade. The whole team did a fantastic job throughout, providing advice to a number of users, stakeholders including UK Government, Swedish Government and the European Space Agency. While some minor impacts have been reported, the event was sufficiently large to test our knowledge and systems, without being particularly damaging and it has allowed us to identify some improvements for the future.

The last seven years has seen the Met Office transition from an organisation not involved in space weather, to become influential globally. The Met Office space weather team is represented on the committees of a number of UN agencies and I've visited the White House twice to discuss space weather, once to speak at the launch of the US National Space Weather Strategy in 2015.

When I look back at what we've achieved over the past seven years, I am incredibly proud. I wonder what the next seven years will bring?

Date Created
October 2017

Protection, prosperity, wellbeing: a focus on disaster risk reduction

Description

Recent crises and disasters across the globe, including Hurricane Irma in the Caribbean, floods and landslides in Sierra Leone, severe flooding in the United States and earthquakes in Mexico serve to highlight the very real and immediate need for disaster risk mitigation and reduction efforts. With many nations still dealing with the impacts of recent events, the UNISDR (United Nations Office for Disaster Risk Reduction) International Day for Disaster Reduction 2017 (IDDR 2017) taking place on Friday 13 October is perfectly timed to highlight some of the challenges faced around the world in preparing for and mitigating against the impacts of disasters, as well as celebrating how communities and nations are working to reduce the exposure to and impacts of disasters.

The UK is a world leader both in responding to crises and in building resilience against future disasters, and the UK Government is committed to continuing to help strengthen global peace, security and governance as well as resilience and response to crises globally. As the UK's national meteorological service, the Met Office works as an advisor to government departments to help them deliver on these commitments as well as supporting early anticipation of developing severe weather events. This helps enable early civil contingency planning in the UK and humanitarian response across the globe.

In addition to immediate crisis response, we provide global expertise essential for long-term resilience building, supporting efforts to build capacity overseas. This helps improve local response to disasters and mitigation against the impacts of our changing climate. We work in partnership with the Department for International Development, the Foreign and Commonwealth Office and the Department for Business, Energy and Industrial Strategy, national meteorological and hydrological services, non-governmental organisations and the private sector to develop weather and climate services across the globe for the protection of lives, livelihoods and property.

In the lead up to IDDR 2017, we will be publishing a series of blog posts highlighting our global disaster reduction expertise and experience. From our use of ground-breaking science to support the development of critical weather and climate services, to our humanitarian response to the Mediterranean refugee crisis, the Met Office is working at the forefront of disaster risk reduction efforts in the UK and across the globe.

View our DRR webpages for more information.

Date Created
October 2017

UNISDR International Day for Disaster Reduction 2017

Description

The idea behind UNISDR International Day for Disaster Reduction 2017 (IDDR 2017) (13 Oct 2017) is by

DRR

is central to much of the work we undertake at the Met Office, and throughout this week we have published a number of blogs looking at some of the ways we are involved.

Our Head of International Development, Dave Britton talked about the wide ranging work we undertake in a blog at the start of the week. We have also highlighted some of our international science and development partnerships such as the Tanzania Meteorological Agency. This partnership has had a strong focus on user engagement in the development of weather and climate services.

Meanwhile, the CSSP China project, part of the Newton-funded Weather and Climate Science for Services Partnership (WCSSP) programme, included scientists developing an innovative technique to assess the potential risk of physically plausible – but as yet unrecorded – weather extremes. This technique was then used in the UK's National Flood Resilience Review (2017).

A very different view of DRR was provided by Met Office Weather Impact Research Scientist, Jo Robbins, following her recent voluntary work in Sierra Leone. Working as part of a MapAction team and in partnership with the UN, Jo supported recovery efforts following the recent landslides. Not only was Jo able to put her Met Office experience and skill to good use, she also developed a deeper understanding of emergency response in situations such as these.

Crisis and humanitarian response work was also the theme of our most recent blog from Gavin Iley, Met Office Head of International Crisis Management and Resilience. In particular, Gavin was keen to highlight the importance of considering impact when using weather information in disaster response.

To conclude our DRR focus week, our Chief Executive Rob Varley talks about the importance of global DRR partnerships and the part that the Met Office and national weather and climate services from around the world play in reducing risk.

Date Created
October 2017

Did You Know? We're testing new weather balloons: from Cornwall to Antarctica!

Description

The Met Office launches over 4300 balloons every year from 6 locations across the UK and is involved in launching thousands more around the globe. These are not party balloons; they are weather balloons that take a small weather observation device, called a radiosonde, up through the atmosphere to the very edges of space.

Radiosondes take highly accurate temperature, moisture, wind and atmospheric measurements, which provide vital observations for weather forecasters, as well as data that helps monitor climate change. This data is then transmitted to a receiver on the ground to be fed into the starting conditions of our weather forecast model, along with thousands of other pieces of information.

Not only do these instruments need to work reliably in extremely challenging and varied conditions but they also need to be extremely light and, as they can't be reused, they need to be cheap.

The Met Office has just completed trials for a new radiosonde as the one that's been used since 2005 is being retired this year. Testing radiosondes isn't straightforward – the atmosphere is constantly changing and a sonde can typically reach heights of 35 km, and travel many miles, before the balloon bursts and falls back to earth. However stable, consistent measurements are vital for the climate record and we need to ensure that there are no breaks in data and that the data itself is not adversely affected by a change in technology.

A new radiosonde has been chosen and, to maintain continuity in the climate record, we are now launching both the old and new sondes at three trial sites for the next year – Rothera (Antarctica), St Helena (Atlantic Ocean) and Camborne (Cornwall). These sites represent a good spread of climate conditions and environments and allow us to continue long-standing climate records. Camborne alone has been flying radiosondes every day since the 1950s. Staff at the Met Office will analyse the data to ensure that the new radiosonde continues to operate as we expect, and that the vital climate data collected is stable.

Radiosonde trials at Rothera, Antartica (Credit Paul Samways, British Antarctic Survey) and Cambourne,

The new radiosonde, the Vaisala RS41, has a few advantages over the sonde we have used for the past few years. It's lighter which means we need less gas (we use helium) to lift it. Not only does this save money, it reduces our use of a valuable resource as well. At the same time, the new instruments are much easier to use. Before a launch, radiosondes have to be calibrated to ensure that the readings they take in the atmosphere are correct. They also have to undergo checks to ensure that they operate properly – we don't want to waste money and resources launching an instrument that won't give us any data. The RS41 allows these ground checks to take place incredibly quickly and easy, so the whole process is more efficient. The data is extremely consistent and stable, which means we can be confident in the information that we receive back and used by our forecasters and in our models.

To find out more about the 100's of thousands of observations we receive each day and how they are a key part in the forecasting process, visit our learning pages on our website.

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October 2017